

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-I-05-15A

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region I staff on this date.

Facility

PSEG Nuclear, LLC  
Hope Creek  
Hancocks Bridge, New Jersey  
Docket: 50-354

Licensee Emergency Classification

☐ Notification of Unusual Event  
☐ Alert  
☐ Site Area Emergency  
☐ General Emergency  
☒ Not Applicable

SUBJECT: SUPPLEMENT - SHUTDOWN GREATER THAN 72 HOURS TO REPAIR A  
LEAK FROM A CHEMICAL DECONTAMINATION PIPE ON THE 'B' REACTOR  
RECIRCULATION LOOP

The NRC has completed its review of the causes and corrective actions for a cracked weld on a 4-inch pipe stub connected to the Hope Creek 'B' reactor recirculation loop and has concluded that the plant is safe for restart. The NRC determined that the condition of the 'B' recirculation pump shaft did not play a role in the cracked weld that leaked and led to a plant shutdown on March 26.

The NRC performed a thorough review of the company's analysis of the cracked weld. While the cause was not attributed to the 'B' recirculation pump shaft, it was important that the company fully understand the cause and take appropriate corrective actions to have reasonable assurance that the condition does not exist elsewhere in the recirculation system.

The preliminary root cause results identified a weld discontinuity that was propagated to failure by fatigue. PSEG concluded that the fatigue was caused by vibration from a normal characteristic of the pump, pressure pulsations at the impeller vane passing frequency, not vibration induced by the pump shaft. The pump vibration data showed that shaft condition did not significantly contribute to the weld failure because the highest shaft vibration occurs at 25 Hz which is a frequency that results in negligible stress at the 4-inch pipe weld.

PSEG has completed a repair which included shortening the pipe stub to make it less susceptible to the vane passing effects and re-welding the pipe stub. A similar activity was performed on the "A" reactor recirculation loop.

The NRC review was conducted onsite by technical specialists from NRC Region I in consultation with technical experts at NRC Headquarters. These specialists have extensive experience in metallurgical properties and failure mechanisms. They performed a thorough, independent review of the company's preliminary root cause determination, reviewed test results and engineering evaluations, and observed company management reviews of the issues.

In response to the NRC's questions, PSEG submitted answers that will be made publicly available in the agency's document management system (ADAMS) through the NRC website.

The final results of the NRC inspection will be documented in the quarterly resident inspector report for the second quarter 2005.

The Region I Public Affairs is prepared to respond to media inquiries. The States of New Jersey and Delaware have been informed.

ADAMS Accession Number: ML050980099

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